

AMENDED CLAIMS

[received by the International Bureau on 18 January 2005 (18.01.05);
claims 2-10 and 12-20 unchanged ; claims 1 and 11 changed (3 pages)]

CLAIMS

What is claimed is:

1. A LNG regasification plant comprising:
a liquefied natural gas storage vessel configured to receive liquefied natural gas and to provide a liquefied natural gas liquid and a liquefied natural gas vapor;
a fractionator that is fluidly coupled to the storage vessel and configured to receive a fractionator feed, wherein the fractionator produces (a) a stream of C₂ and lighter components and (b) a stream of C₃ and heavier components;
wherein refrigeration content of the liquefied natural gas liquid condenses the C₂ and lighter components; and
wherein the fractionator feed is formed from a combination of the C₃ and heavier and the liquefied natural gas vapor in which the C₃ and heavier components absorb the liquefied natural gas vapor.
2. The plant of claim 1 wherein a portion of the liquefied natural gas vapor from the storage vessel is routed to a second liquefied natural gas storage vessel.
3. The plant of claim 1 further comprising a heat exchanger configured to cool the fractionator feed using the liquefied natural gas liquid as a refrigerant.
4. The plant further comprising a second heat exchanger configured to heat the fractionator feed using the stream of C₃ and heavier components from the fractionator as a heat source.
5. The plant of claim 1 wherein the fractionator is configured to provide the condensed C₂ and lighter components to the liquefied natural gas liquid.
6. The plant of claim 1 further comprising a second liquefied natural gas storage vessel that provides the liquefied natural gas and configured to provide a second liquefied natural gas vapor to the second liquefied natural gas storage vessel.
7. The plant of claim 6 wherein the second liquefied natural gas storage vessel is located on a ship.

8. The plant of claim 1 wherein the fractionator is configured to receive a portion of the liquefied natural gas liquid as fractionator feed after the liquefied natural gas liquid provided refrigeration for condensation of the C₂ and lighter components.
9. The plant of claim 8 wherein the fractionator is further configured to provide a liquefied petroleum gas as a bottom product.
10. The plant of claim 8 wherein the fractionator is configured to receive another portion of the liquefied natural gas liquid as condensation refrigerant after the liquefied natural gas liquid has provided refrigeration for condensation of the C₂ and lighter components.
11. A method of handling liquefied natural gas vapor in a LNG regasification plant, comprising:
providing a liquefied natural gas storage vessel wherein the storage vessel provides liquefied natural gas liquid and a liquefied natural gas vapor;
combining the liquefied natural gas vapor with a stream of C₃ and heavier components to thereby absorb the liquefied natural gas vapor and to thereby form a combined product;
separating in a fractionator the combined product into the stream of C₃ and heavier components and a stream of C₂ and lighter components; and
condensing the stream of C₂ and lighter components using refrigeration content of the liquefied natural gas liquid.
12. The method of claim 11 further comprising a step of using the liquefied natural gas liquid as a refrigerant to cool the combined product before the combined product is fed to the fractionator.
13. The method of claim 11 further comprising a step of using the stream of C₃ and heavier components from the fractionator to heat the combined product before the combined product is fed to the fractionator.
14. The method of claim 11 further comprising a step of providing a second liquefied natural gas storage vessel that provides the liquefied natural gas to the liquefied natural gas storage vessel.

15. The method of claim 14 wherein the second liquefied natural gas storage vessel receives a portion of the liquefied natural gas vapor.
16. The method of claim 14 wherein the second liquefied natural gas storage vessel is configured to form a stream of liquefied natural gas vapor, and wherein the stream of liquefied natural gas vapor is provided back to the second liquefied natural gas storage vessel.
17. The method of claim 14 wherein the second liquefied natural gas storage vessel is located on a ship.
18. The method of claim 11 further comprising a step feeding a portion of the liquefied natural gas liquid to the fractionator after the liquefied natural gas liquid has provided refrigeration for condensation of the C₂ and lighter components.
19. The method of claim 18 wherein the fractionator is configured to provide a liquefied petroleum gas as a bottom product.
20. The method of claim 19 further comprising a step of using another portion of the liquefied natural gas liquid as condensation refrigerant after the liquefied natural gas liquid provided refrigeration for condensation of the C₂ and lighter components.